IN THE CLAIMS:

The pending claims are set forth below and have been amended and/or cancelled, without prejudice, where noted:

1-12. (Cancelled)

13. (Previously Presented) A method for characterizing an extrudate flowing under die tooling
comprising:

(a) emitting a plurality of laser signals at a plurality of vertically displaced locations from a laser system responsive to detection of the lower edge of an extrudate exiting from a die to emit successive digital signals upon the detection of said lower edge;

(b) applying said digital signals successively from said laser system to a micro controller;

(c) activating a flash by said micro controller;

(d) providing at least one camera with a CCD sensor that is activated by the micro controller and synchronized with the flash;

(e) recording the times of said successive laser signals and digital signals; and

(f) providing a central processor that instantaneously calculates an equation for the combined swell and sag curve of the extrudate and generates separate sag and swell components corresponding to said curve.

14. (Previously Presented) The method of claim 13 wherein said plurality of laser signals are generated by a laser which is moved vertically as said signals are generated.

15. (Previously Presented) The method of claim 13 wherein said plurality of laser signals are generated by a plurality of vertically displaced lasers.

16. (Previously Presented) The method of claim 15 wherein said plurality of laser signals are sequentially generated by successively positioned vertically displaced lasers,

17. (Previously Presented) The method according to claim 13 wherein the CCD sensor is a two-phase charge-coupled sensor with a transparent electrode.

18. (Previously Presented) The method according to claim 14 wherein said laser is moved vertically at a speed of no more than 2 m/s.

19-20. (Cancelled)

21. (Previously Presented) The method according to claim 20 wherein the duration of said flash is within the range of 1/9,100 to 1/28,000 second.

22. (Previously Presented) The method according to claim 13 further comprising providing feedback software which functions to adjust production parameters of die design, temperature and shear rate.

23. (Previously Presented) The method according to claim 13 wherein said extrudate is a thermoplastic polymer.

24. (Previously Presented) The method according to claim 23 wherein the extrudate is selected from the group consisting of polyethylene, polypropylene, polystyrene, polyvinyl chloride, polyamide, polymethyl methacrylate, polyoxymethylene, acrylonitrile-butadiene-styrene, polycarbonate, polyacrylonitrile, styrene-acrylonitrile and ethylene vinyl acetate.

25. (Previously Presented) The method according to claim 13 wherein said extrudate is selected from the group consisting of polyethylene and polypropylene and mixtures thereof.

26. (Previously Presented) The method according to claim 13 wherein said extrudate comprises polyethylene.

27. (Previously Presented) The method according to claim 13 further comprising providing three of said cameras and characterizing the behavior of said extrudate exiting said die in three dimensions.

28. (Previously Presented) The method according to claim 13 wherein a single camera is employed to characterize the behavior of said extrudate exiting from said die in two dimensions.

29. (Previously Presented) The method according to claim 13 wherein the onset of melt fracture of said extrudate is detected.

30. (Previously Presented) The method according to claim 13 further comprising calculating the relaxation time of said extrudate.